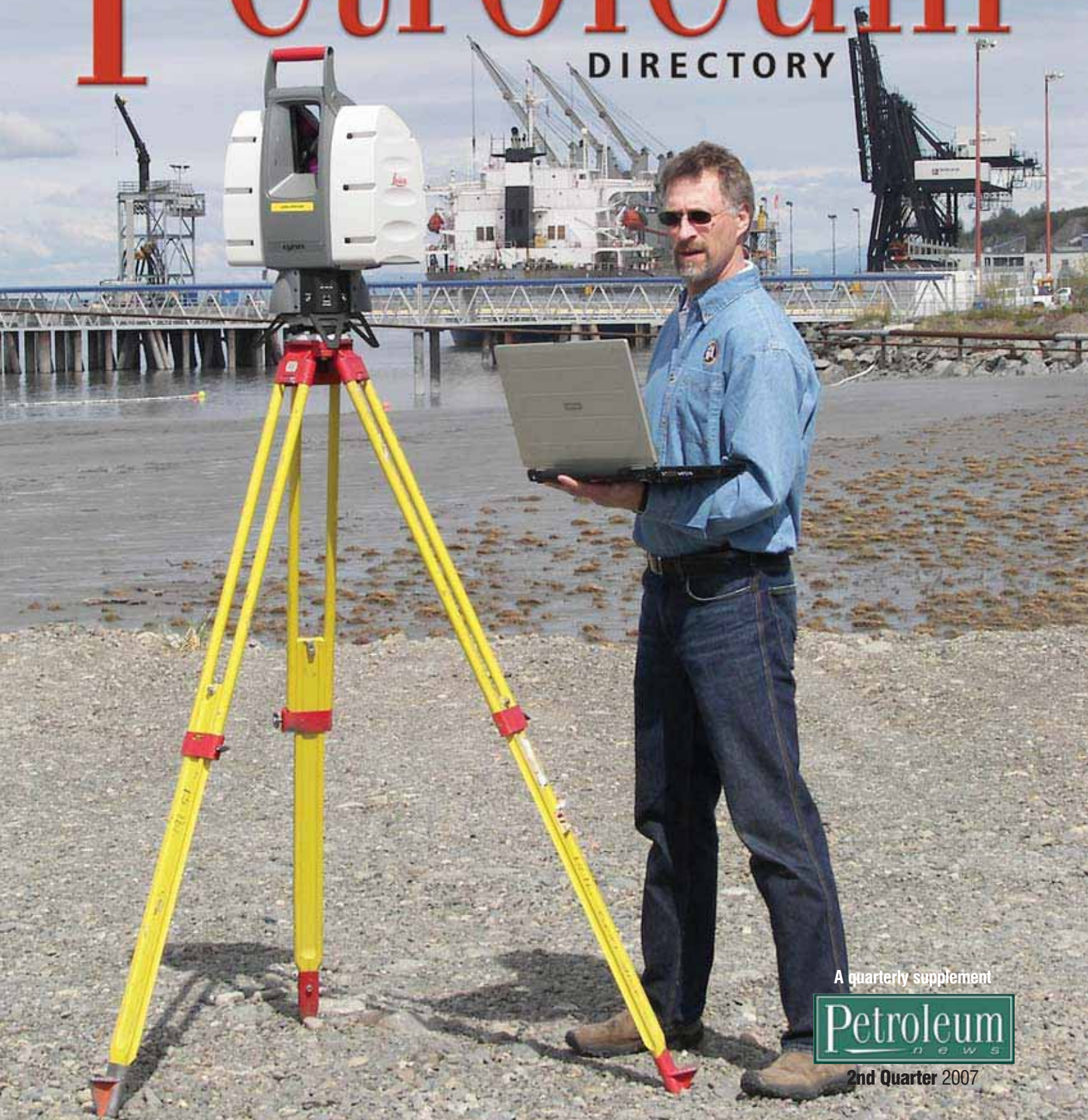


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COURTESY LOUNSBURY

On site surveying in Anchorage

Lounsbury takes off with high-definition surveying

Adding high-definition surveying to its list of comprehensive surveying and engineering design services has Lounsbury looking forward to the future. Since 1949 the company has provided services statewide to the oil and gas industry, state and local governments and the private sector. According to Ken Ayers, vice president, this exciting technology is revolutionizing the way data is obtained and utilized.

With high-definition surveying, data is collected remotely rather than from direct measurement and it is collected in three-dimensions. The technology has been around for many years, but has recently taken hold primarily due to dramatic software improvements.

The only drawback is the cost of the equipment. To buy a laser scanner and the software costs about \$150,000 in addition to the required training needed to operate the equipment. The scanner itself is expensive to operate, but like many high-

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tech applications, you have to upgrade the software every year.

“We’ve been looking at this for over eight years, and we kept asking ourselves, ‘how do we use this technology to provide more cost-effective solutions and end products that our clients can actually use? That was one of the toughest things to get past.”

Ayers credits software improvements and computer advancements for the company’s ability to handle the large amounts of data the scanner produces. “We can manipulate it with the software provided and convert it into more traditional software platforms that our clients might use, like AutoCAD. The time finally felt right for us to get into this market.”

The company hired Rob Moore, a survey technician, to spearhead the project. He’s been involved in scanning for several



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years at different companies. "It's great to have him onboard. We're well known for land surveying, and we have always excelled at implementing new technology as it emerges," said Ayers. Lounsbury was one of the first companies to use electronic data collection, computer aided drafting technology and global positioning systems in Alaska. "This is the next leap forward in survey technology," he added.

Ayers explained that high-definition scanning requires less time in the field, in addition to the tremendous amount of detail that's produced, "so our mapping is more accurate and our field efforts are more efficient." For each job the company figures out how much it would cost using conventional methods, using a survey crew versus sending a scanning crew. Ayers stressed that "you have to make sure you're using the right tool for the job and spending you client's dollars wisely."

Ayers says the tremendous amount of detail is the most extraordinary thing about it. Point data is collected at a density suitable to the application. The point data is often referred to as a "point cloud." Several point clouds can be registered together to compile virtual three-dimensional models. These models can be used in a variety of ways by design professionals who are moving toward true three-dimensional design, project and facility management. "For example, when we

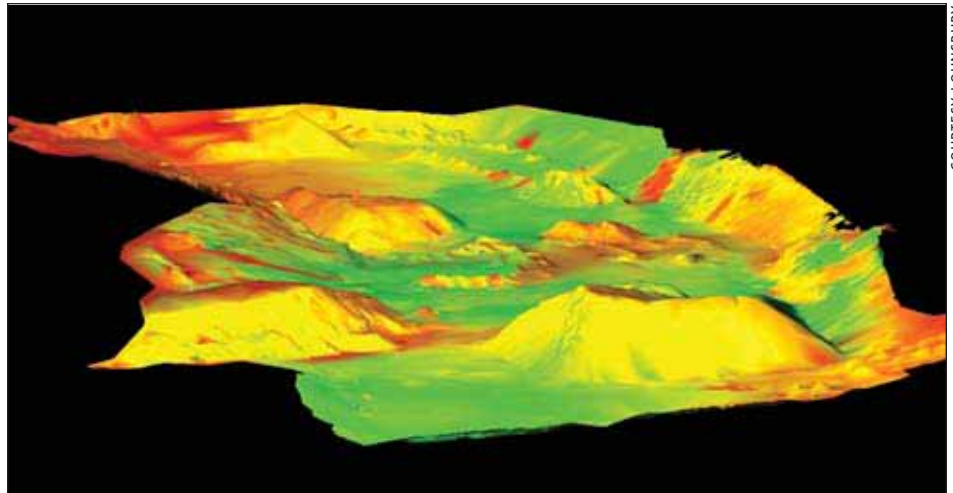


Image produced from recent surveying at local gravel pit.

model pipes the software knows that it's a pipe and will make it look like a solid surface that is dimensionally and spatially correct."

Keeping the product also means marketing its different uses. The company is actively pursuing projects that would benefit from the technology. Luckily the applications for high definition scanners are unlimited. It can be used to make three dimensional maps of virtually anything without having to measure it physically. It's all done remotely with a laser scanner. The technology is used regularly for forensics at crime scenes, for architecture, industrial facilities, archeological projects, bridges, and in construction man-

agement as a project progresses, to compare how the construction relates to the original design.

"We'd like to expand into new markets, and wouldn't mind having a crew ready to go on crime scenes," said Ayers. One of the ideal uses for high definition scanning is for highway closures, especially in a state with limited transportation routes. If an accident closes down a major road, scanning can be completed in as little as an hour. "With this technology you can get in there remotely so no one's disturbing the crime scene, you can see everything, including the skid marks on the pavement."

Lounsbury has used the technology on several different projects. One involved mapping the existing site conditions at several gravel pits and determining volumes of stockpiled material, for which they are currently designing a program to monitor the resource extraction and report volumes on an annual basis.

Another project included mapping of high traffic volume street intersections that greatly reduces interruptions to traffic and significantly increases safety for the field personnel. Comparisons of the scan data versus traditional data collection are still being analyzed. However, the tremendous detail of the surface data from scanning provides a significant advantage to the design engineer.

Lounsbury clients can download a free viewer that allows them to view and measure within the point cloud data obtained by the scanner. The feature is a great visual reference tool and makes the data accessible to people who aren't necessarily trained in the more sophisticated software platforms. For more information contact Lounsbury at (907) 272-5451 or k.ayers@lounsburyinc.com.



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